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# Executive Summary

This project represents a comprehensive effort to identify and document all plant community types present in the Montana portion of the Beaverhead Mountains Ecoregional Section. The study area is an ecoregion defined by R.G. Bailey that extends from the Centennial Mountains south of Red Rock Lakes National Wildlife Refuge in southwestern Montana, west to the Continental Divide along the Beaverhead Mountains and includes the headwaters of the Beaverhead, Madison and Clarks Fork River.

Our goal for this project was to compile ecology plot data, validate and refine existing plant association types and combine them into a new classification following the National Vegetation Classification Standard. We tapped a number of previous and ongoing studies, and conducted extensive plant community surveys during 1998 field season. The result is a classification documenting 273 plant communities in the Beaverhead Mountains Section of southwest Montana.

This classification has three major components. *The first is a complete list of 273 plant associations with state and global Heritage ranks that reflect their conservation status.* The second component is a dichotomous plant association key organized by physiognomic type. The key is arranged according to the National Vegetation Classification, using the concept of forest, woodland, shrubland and herbaceous vegetation, and includes a number of newly identified vegetation types. The third component consists of standardized descriptions for 130 plant associations.

The results of this study underscore the high diversity of plants and vegetation types in this region of Montana. Over half of the 480 plant associations identified for the state of Montana (57%) were documented to occur within the Beaverhead Mountains Section. This is especially impressive, given that the region comprises less than one-tenth of the state's total land area.

Of these 480 plant associations, just over 25% were ranked G3 or higher (some tentatively), indicating rangewide/global rarity or imperilment. The rarest community documented (ranked G1) was *Artemisia cana*/*Leymus cinereus* shrubland, found in a single location at Big Muddy Creek. Some of the communities ranked as imperiled (G2) occur in

bottomlands or riparian areas, and are at greatest risks from certain grazing practices, weeds, and in some cases conversion to agriculture. Others occur as small patches in alpine or high subalpine environments, and are not particularly threatened. Yet another community, *Elymus lanceolatus* / *Phacelia hastata*, occurs in the Centennial Sandhills and relies on a natural disturbance regime maintained by animal- or fire-induced blowouts. Over time, some communities will decrease in rank, as additional stands are discovered while others may become imperiled and increase in rank due to loss of habitat or the increase of noxious weeds.

In addition to plant communities, this study also identified 130 plant species of global or state special concern that occur in the Beaverhead Mountains Section. This represents 30% of all special concern vascular plant species tracked in Montana, and includes 41% of all those that are globally significant (G1-G3). Most of these occur on at one or more locations on BLM administered public lands. The Beaverhead Section also supports 18 plant species that are endemic to Montana (occur nowhere else); this represents 31% of Montana's endemic plant species. The regions geological diversity, vertical relief, and the unique intersection Pacific and Gulf (of Mexico) storm tracks, as well as the overlap of several floristic elements explain the diversity of plants and vegetation communities.

Finally, six landscapes of exceptional ecological significance were identified, based upon the diversity and conditions of vegetation communities represented, and are described in this report. They include Bannock, Blacktail & Robb-Ledford, Centennial Mountains & Valley, Centennial Sandhills, Johnson Gulch-Deer Canyon Creek, and Morrison Lake Wetlands and Baldy Mountain. Each includes BLM lands, as well as other types of public ownership.

The Beaverhead Mountains Section is the first large ecoregional unit in Montana with a comprehensive Vegetation Classification compiled in a single document. This report reflects our current knowledge, and is by no means exhaustive. Additional survey work is needed to better document the globally imperiled plant communities and to provide better information to assist in their conservation and management. There is also a need for additional inventory and documentation of good quality, representative communities, and significant landscapes. These areas, and the limited resources they support, are of considerable ecological value and are worth managing to maintain their ecological value character.

# Plant Associations and Related Botanical Inventory of the Beaverhead Mountains Section, Montana

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